

REMARKS

Favorable reconsideration of the application is respectfully requested in light of the amendments and remarks herein.

Applicants acknowledge with appreciation that the Examiner has indicated that claims 10 and 14 are allowable.

By this amendment, new claims 19 and 20 have been added. Upon entry of this amendment, claims 1-16 and 18-20 will be pending.

§103 Rejections

In Section 2 of the Office Action, the Examiner has rejected claims 1-8 and 18 under 35 U.S.C. §103(a) as being unpatentable over Awater et al. (U.S. Patent 6,175,551; hereinafter referred to as "Awater") in view of Van Nee (U.S. Patent 5,841,813; hereinafter referred to as "Van Nee"). This rejection is traversed below.

As shown above, claim 1 calls for:

1. (Original) Transmission method for transmitting OFDM-signals, comprising the steps of modulating said signals onto a plurality of subcarriers using a OFDM-modulation method, transforming said modulated signals into the time domain, and transmitting said signals characterized in that in said modulating step every M-th subcarrier is modulated with a signal, wherein M is an integer and $M \geq 2$.

Accordingly, in the method of claim 1, not every subcarrier is modulated and those subcarriers that are modulated are modulated according to a regular pattern determined by the value of M. M indicates the pattern of which subcarriers are modulated. M does not indicate the number of available subcarriers. A regular subset of the available subcarriers is modulated

according to the value of M . For example, where M equals 2, every second subcarrier is modulated. Where M equals 3, every third subcarrier is modulated, and so on.

It does not appear that the Examiner has established how the combination of Awater and Van Nee, as relied upon by the Examiner, disclose or suggest claim 1. In particular, it does not appear that the Examiner has established how the cited combination of Awater and Van Nee disclose or suggest modulating every M -th subcarrier with a signal, wherein M is an integer and $M \geq 2$, as called for in claim 1. The Examiner contends that Awater addresses modulating every M -th subcarrier with a signal and that Van Nee addresses $M \geq 2$. It appears that the portion of Awater referenced by the Examiner addresses modulating each subcarrier (see Awater at column 4, lines 3-6: "... where respective data from the blocks of bits is modulated onto each of the subcarriers."). It appears that the portion of Van Nee referenced by the Examiner to disclose $M \geq 2$ addresses modulating eight OFDM subcarriers with eight complementary codes (see Van Nee at column 5, lines 50-53: "Encoder 30 then generates the complementary codes θ_i , in the manner described above and then phase modulates eight OFDM subcarriers, i , using the resulting complementary codes, respectively."). It appears that the Examiner is referring to Van Nee to disclose modulating a number of subcarriers greater than two. However, as noted above, in claim 1, M represents the pattern of which subcarriers to modulate, not how many subcarriers are available in the plurality of subcarriers. It does not appear that the Examiner has explained how modulating a number of subcarriers using the same number of complementary codes discloses or suggests using $M \geq 2$ for modulating every M -th subcarrier. Therefore, it is respectfully submitted that the Examiner has not established how the cited combination of Awater and Van Nee discloses or suggests claim 1, or claims 2-4 and 19 that depend from claim 1. Similar arguments apply to claims 5-8, 18, and 20.

Based upon the foregoing, it is submitted that claims 1-8 and 18 are not anticipated by nor rendered obvious by the teachings of Awater and Van Nee as relied upon by the Examiner. Accordingly, it is submitted that the Examiner's rejection of claims 1-8 and 18 based upon 35 U.S.C. §103(a) has been overcome by the present remarks and withdrawal thereof is respectfully requested.

In Section 3 of the Office Action, the Examiner has rejected claims 9, 11-13, and 15-16 under 35 U.S.C. §103(a) as being unpatentable over Van Nee in view of Kumar (U.S. Patent 5,966,401; hereinafter referred to as "Kumar"). This rejection is traversed below.

As shown above, claim 9 calls for:

9. Receiving method for receiving OFDM-signals comprising M identical or respectively mirrored wave forms within one OFDM-timeburst, wherein M is an integer and $M \geq 2$, comprising the steps of
receiving said OFDM-signals,
correlating said wave forms to obtain time synchronization using M-1 correlators,
transforming said signals into the frequency domain, and
demodulating said signals.

Accordingly, in the method of claim 9, M-1 correlators are used for correlating the M wave forms. As a result, correlating the M wave forms to obtain time synchronization is affected by the number (M) of identical or respectively mirrored wave forms within one OFDM-timeburst because M-1 correlators are used for correlating the M wave forms.

It does not appear that the Examiner has established how the combination of Van Nee and Kumar, as relied upon by the Examiner, discloses or suggests claim 9. In particular, it does not appear that the Examiner has established how the cited combination of Van Nee and Kumar discloses or suggests using M-1 correlators for correlating M wave forms, as called for in claim

9. The Examiner contends that Van Nee addresses receiving OFDM-signals comprising M identical or respectively mirrored wave forms within one OFDM-timeburst, wherein M is an integer and $M \geq 2$, and that Kumar addresses M-1 correlators. It appears that the portions of Kumar referenced by the Examiner to disclose M-1 correlators disclose using two or four correlators (see Figures 6 and 8 of Kumar). It does not appear that the Examiner has explained how these portions of Kumar address using less correlators (using M-1 correlators) than the number of wave forms (M). Furthermore, one portion of Kumar referenced by the Examiner at column 19, lines 43-47 reads: "In general, for a biorthogonal signal set with a plurality of M orthogonal or AO signals, only one of which is transmitted in a single baud, there is a plurality of M correlators." This language appears to indicate that the same number of correlators is used as the number of signals. It does not appear that the Examiner has explained how the referenced portions of Kumar addresses using less correlators than the number of waveforms, as called for in claim 9. Therefore, it is respectfully submitted that the Examiner has not established how the cited combination of Van Nee and Awater discloses or suggests claim 9, or claims 10-12 and 20 that depend from claim 9. Similar arguments apply to claims 13-16.

Based upon the foregoing, it is submitted that claims 9, 11-13, and 15-16 are not anticipated by nor rendered obvious by the teachings of Van Nee and Kumar as relied upon by the Examiner. Accordingly, it is submitted that the Examiner's rejection of claims 9, 11-13, and 15-16 based upon 35 U.S.C. §103(a) has been overcome by the present remarks and withdrawal thereof is respectfully requested.

Allowable Claims

In Section 4 of the Office Action, the Examiner has objected to claims 10 and 14 as being dependent upon a rejected base claim. Claim 10 depends from claim 9 and claim 14 depends from claim 13. As discussed above, it is submitted that the rejections to claims 9 and 13 have been overcome, and so it is respectfully requested that the objection to claims 10 and 14 be withdrawn.

New Claims

New claims 19 and 20 depend from claims 1 and 5, respectively. As discussed above, it is submitted that the rejections to claims 1 and 5 have been overcome, and so it is respectfully submitted that claims 19 and 20 should be allowable.

Conclusion

In view of the foregoing, entry of this amendment, and the allowance of this application with claims 1-16 and 18-20 is respectfully solicited.

In regard to the claims amended herein and throughout the prosecution of this application, it is submitted that these claims, as originally presented, are patentably distinct over the prior art of record, and that these claims were in full compliance with the requirements of 35 U.S.C. §112. Changes to these claims, as presented herein, are not made for the purpose of patentability within the meaning of 35 U.S.C. §§101, 102, 103 or 112. Rather, these changes are made simply for clarification and to round out the scope of protection to which Applicants are entitled.

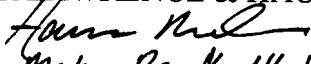
In the event that additional cooperation in this case may be helpful to complete its prosecution, the Examiner is cordially invited to contact Applicants' representative at the telephone number written below.

The Commissioner is hereby authorized to charge any insufficient fees or credit any overpayment associated with the above-identified application to Deposit Account 50-0320.

Respectfully submitted,

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